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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,758	12/01/2003	Richard F. Crook	TPR110014000	3277
22891	7590	05/09/2005	EXAMINER	
DELIO & PETERSON 121 WHITNEY AVENUE NEW HAVEN, CT 06510			FLANIGAN, ALLEN J	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,758

Applicant(s)

CROOK, RICHARD F.

Examiner

Allen J. Flanigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 20-36 and 44-54 is/are pending in the application.
- 4a) Of the above claim(s) 6, 9, 13, 20-36, 44-49, 51 and 53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 10-12, 50, 52 and 54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Claims 6, 9, 13, 20-36, 44-49, 51, and 53 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/7/2005.

Claim 9 is not readable on the elected Fig. 4 species because the claim recites sealing material applied in the gap between the tube exterior and the tube-receiving hole 46 in the header 41; as Fig. 4, the elected embodiment, clearly shows, no such sealant is present in this gap in this particular embodiment (cf Fig. 6 embodiment), nor is there a description in the specification of providing sealant in the gap in this embodiment. Similarly, regarding claims 13 and 51, there is no showing or description of the use of brazing to attach tubes to the header structure in the Fig. 4 embodiment. Claims 34-36, 44-47, and 53 are not readable on the elected species because the Fig. 4 embodiment clearly shows an integral layer of sealant formed on the underside of header plate 41, thus the recitation of "a plurality of discrete" elastomeric sealing joints in claim 33 (and a similar recitation in claims 44 and 53) is inconsistent with the disclosed structure of this embodiment.

Claim 8 is objected to as being inconsistent with the disclosure. Claim 8 depends from claim 7, and since a dependent claim must include the limitations of the claim from which it depends, it thus appears to be drawn to curing by a combination of room temperature vulcanization and UV light. However, the implication of the disclosure is that these steps are alternates, i.e.

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either vulcanization or UV light can be employed to cure the silicone elastomer sealant.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 10, 11, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Tamura.

Tamura teaches a curable adhesive sealant layer that provides a leakproof joint between tube ends and a tube sheet. As disclosed in columns 5-6 of Tamura, the tubes 11 are inserted into holes 13a in the header plate. Subsequently, a flowable thermosetting adhesive is “quickly poured into the recess 13d” (bridging sentence of columns 5-6), and is subsequently heat cured to form a watertight seal. Regarding claim 5, any material that is characterizable as “flowable” is deemed to fall within the scope of the term “liquid”, as these terms are presumed to be interchangeable descriptors of the same property¹.

Claims 12 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones.

¹ Liquid is defined as the “state of matter in which a substance exhibits a characteristic readiness to flow”. From the American Heritage Dictionary of the English Language, 3rd edition.

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Jones discloses a two-piece header/manifold assembly employing a curable adhesive that is placed in a gap between the components, and cured after assembly (see e.g. paragraph 13).

Claim 54 is rejected under 35 U.S.C. 102(b) as being anticipated by Collgon.

See Figs. 6-7 and lines 51-62 of column 5 of Collgon, indicating that the header plate 24 is "coated" with a "sheet 27 of rubber or similar", indicating a bond between the rubber and the tube sheet. Note also that the tube ends are not bonded but compression fit within rubber sleeves 29 formed on the sheet (bridging paragraph of columns 5-6).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura in view of Kato et al., further in view of Waterman et al.

Kato et al., like Tamura, shows the use of a curable (in situ) adhesive/sealant. Kato et al. specifically suggests the use of an elastomeric (silicone rubber) sealant (lines 50-60 of column 5). Thus, it would have been an obvious substitution of equivalents to use silicone rubber sealant in place of

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the resin suggested in the illustrative embodiment of Tamura. Kato et al. make no mention of heating the silicone rubber adhesive to cure it; presumably, it is one of the well-known RTV (room temp. vulcanizing) silicones used widely as sealants, such as that disclosed in Waterman et al. to seal the ends of heat exchanger tubes to tube plates (see lines 40-49 of column 3).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references show various sealing arrangements for tube ends in tube sheets.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (571) 272-4910. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Allen J. Flanigan
Primary Examiner
Art Unit 3753

AJF